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| OWENS CORNING 2790 COLUMBUS ROAD GRANVILLE, OH 43023 | | | EXAMINER WOLLSCHLAGER, JEFFREY MICHAEL | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/811,249

Applicant(s)

CLEMENTS, CHRISTOPHER J.

Examiner

Jeff Wollschlager

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-16,21-24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-16, 21-24 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's amendment to the claims filed April 16, 2007 has been entered. Claims 1, 11, 12, 15 and 21 are currently amended. Claim 25 has been canceled. Claim 26 is new. Claims 1, 2, 4-16, 21-24 and 26 are pending and under examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-6, 8-10, 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutsson et al. (U.S. Patent 5,766,541) in view Collins (US 2,288,072).

Regarding claim 1, Knutsson et al. teach a method for making preforms from glass fiber strands wherein the glass fiber strands are texturized by separation to form a wool type product (col. 3, lines 50-55) prior to entry into the mold through a texturizing gun (Figure 9). The binder, water as a wetting agent, and glass fibers are fed into the mold (col. 3, lines 36-57), the mold is heated to cure the binder and the glass strands (col. 9, lines 52-67) and the mold is cooled to form the preform (col. 8, lines 25-32). Additionally, U.S. Patent 4,569,471 to Ingemansson et al., which is incorporated by reference into Knutsson et al. at col. 9, lines 8-12 disclose the texturized wool-like fiber may travel through a hose prior to being fed into the mold ('541: col. 12, lines 8-11; '471: Figure 3, element (50)). Further, Knutsson et al. disclose the binder preferably comprises about 2% to about 10% by weight of the preform (col. 4, lines 14-19). Knutsson et al. do not expressly disclose the binder is sugar in powdered or granulated form.

However, Collins discloses a method for making a fibrous product from glass wool fibers wherein a powdered sugar binder is disclosed and the binder is applied and selected in such a manner as to adjust conditions such as toughness, hardness, rigidity, density, temperature resistance and water-proofness (page 1, col. 1, lines 47-52, col. 2, lines 3-28; page 2, lines 41-63).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a powdered/granulated sugar as suggested by Collins as the binder in the method disclosed by Knuttson et al. since Collins suggests that sugar is an art recognized equivalent alternative binder known in the art for glass wool applications.

As to claim 2, the fibers employed by Knuttson et al. are continuous (col. 3, lines 50-58).

As to claim 4, Knuttson et al. disclose feeding the binder and strands simultaneously (col. 8, lines 45-60).

As to claim 5, Knuttson et al. disclose a shape corresponding to a muffler (Figure 2; col. 3, lines 8-22).

As to claim 6, the preform (10) is removed from the mold (22) (Figure 3).

As to claim 8, the mold employed by Knuttson et al. is perforated (col. 4, lines 20-35).

As to claim 9, Knuttson et al. pass heated air through the perforated preform sufficient to cause curing (col. 9, line 52-col. 10, line 5).

As to claim 10, Knuttson et al. pass air through the perforated preform mold for cooling (col. 8, lines 7-16).

Regarding claim 21, Knutsson et al. teach a method for making preforms from glass fiber strands wherein the glass fiber strands are texturized by separation to form a wool type product (col. 3, lines 50-55) prior to entry into the mold through a texturizing gun (Figure 9). The binder,

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water as a wetting agent, and glass fibers are fed into the mold (col. 3, lines 36-57), the mold is heated to cure the binder and the glass strands (col. 9, lines 52-67) and the mold is cooled to form the preform (col. 8, lines 25-32). Further, Knuttson et al. disclose the binder preferably comprises about 2% to about 10% by weight of the preform (col. 4, lines 14-19). Knuttson et al. do not expressly disclose sugar as the binder.

As to claim 22, Knuttson et al. disclose feeding the binder and strands simultaneously (col. 8, lines 45-60).

As to claim 24, the fibers employed by Knuttson et al. are continuous (col. 3, lines 50-58).

Claims 7 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutsson et al. (U.S. Patent 5,766,541) in view Collins (US 2,288,072), as applied to claims 1, 2, 4-6, 8-10, 21, 22 and 24 above, and further in view of Golden et al. (US 5,317,037).

As to claims 7 and 23, the combination teaches the method as set forth above. The combination does not expressly teach the melting point of the powdered sugar. However, Golden et al. provide evidence that sugars known to be suitable as binders, such as sucrose, dextrose, and fructose, have a melting point in the range of 120 °C (248 °F) to 175 °C (347 °F) (col. 2, lines 52-58). The examiner notes that the disclosed melting point of the sugars is well above the lower limit set forth in the claim.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a sugar such as sucrose, fructose, or dextrose as the sugar binder in the combination set forth above for the purpose of employing readily available and well-known sugars known to be effective as a binders.

Claims 11, 15 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Chenoweth et al. (US 4,751,134) in view of Kirk (US 6,319,444) and Tyhurst (US 3,210,230).

Regarding claim 11, Chenoweth et al. teach a method of making a non-woven matrix of mineral (e.g. glass) fibers and synthetic fibers wherein the activation of the binder, with heat, within the matrix is controlled such that only selected fibers are bonded to each other, such as the fibers adjacent to one or both faces of the matrix to facilitate production of a desired product (Abstract; col. 2, lines 1-24 and 30-54; col. 4, lines 18-23 and 63-66; col. 5, lines 32-54; Figure 7) thereby leaving the other fibers unbonded. Additionally, Chenoweth et al. teach that an imperforate film or skin layer may be applied to the surfaces of the matrix/blanket to provide a smooth surface on the product (col. 2, lines 25-28). Chenoweth et al. do not teach employment of continuous glass fibers nor do they provide detailed teaching on how the skin layer is formed.

However, Kirk teaches that in forming products from glass wool fibers, continuous glass fibers provide advantages of improved strength, higher service temperature and lower levels of required binder than discrete length glass fibers and employ a heated mold to shape the product as desired (Figure 2; col. 1, line 23-col. 2, line 34; col. 7, line 56-col. 8, line 4). Additionally, Tyhurst teaches a method of forming a fiber-reinforced article with a skin layer/gel coating wherein a binder is placed on the internal wall of a mold prior to placing glass fibers into the mold (Figure 5; col. 3, lines 4-51).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed continuous glass fibers as suggested by Kirk in the method disclosed by Chenoweth et al. and to have additionally formed the skin layer/gel coating disclosed by Chenoweth et al. by the method disclosed by Tyhurst for the purpose of realizing the advantages of continuous glass fibers disclosed by Kirk and to have effectively formed the skin layer with a smooth finish on all exposed surfaces as suggested by Tyhurst.

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As to claims 15 and 16, Kirk teaches the fibers are texturized prior to entry into the mold (Abstract; Figure 1). Further, it is noted that the molded product is intrinsically removed from the mold when the process is complete.

Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chenoweth et al. (US 4,751,134) in view of Kirk (US 6,319,444) and Tyhurst (US 3,210,230), as applied to claims 11, 15 and 16 above, and further in view of Collins (US 2,288,072) and Golden et al. (US 5,317,037).

As to claim 12, the combination teaches the method set forth above. Chenoweth et al. do not teach the skin layer binder is a sugar as claimed. However, Collins discloses a method for making a fibrous product from glass wool fibers wherein a powdered sugar binder is disclosed and the binder is applied and selected in such a manner as to adjust conditions such as toughness, hardness, rigidity, density, temperature resistance and water-proofness (page 1, col. 1, lines 47-52, col. 2, lines 3-28; page 2, lines 41-63). Additionally, Golden et al. provide evidence that sugars known to be suitable as binders, such as sucrose, dextrose, and fructose, have a melting point in the range of 120 °C (248 °F) to 175 °C (347 °F) (col. 2, lines 52-58). The examiner notes that the disclosed melting point of the sugars is well above the lower limit set forth in the claim.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed sugar as the binder for forming the skin layer in the method disclosed by Chenoweth et al. since Collins suggests that sugar is an art recognized equivalent alternative binder known in the art for glass wool applications and Golden et al disclose specific sugars suitable for employment as analogous binders.

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As to claim 13, Chenoweth et al. teach activating the binder with heat (col. 4, lines 62-66) and Kirk teach employment of hot air to melt the binder in a mold (col. 7, line 6-col. 8, line 21).

As to claim 14, Kirk teaches heating the mold prior to placing binder into the mold (col. 8, line 1-7).

Claim 12-14 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chenoweth et al. (US 4,751,134) in view of Kirk (US 6,319,444) and Tyhurst (US 3,210,230), as applied to claims 11, 15 and 16 above, and further in view of Delvaux et al. (US 6,254,810) and Chiu et al. (US 6,800,364).

As to claims 12 and 26, the combination teaches the method set forth above. Chenoweth et al. do not teach the skin layer binder is sugar as claimed. However, Chiu et al. teach employment of a sucrose solution binder (Abstract; col. 4, lines 30-67) and Delvaux et al. (Abstract; col. 3, lines 18-66) teach formation of a strong protective coating for a fabric made of glass fibers wherein the protective coating contains sugar.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a sugar solution such as a sucrose solution as suggested by Chiu et al. and Delvaux et al. in the method disclosed by Chenoweth et al. for the purpose as suggested by Delvaux et al. of providing an excellent protective cover for the fabric (Abstract).

As to claim 13, Chenoweth et al. teach activating the binder with heat (col. 4, lines 62-66) and Kirk teach employment of hot air to melt the binder in a mold (col. 7, line 6-col. 8, line 21).

As to claim 14, Kirk teaches heating the mold prior to placing binder into the mold (col. 8, line 1-7).

Claims 11, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hetherington (US 4,846,302) in view of Kirk (US 6,319,444) and Oswitch et al. (US 3,812,074).

Regarding claim 11, Hetherington teaches a method of forming a muffler wherein a binder hardened outer shell surrounds a soft fibrous core (Abstract; col. 1, lines 15-32). The binder hardened outer shell is formed by bringing the outer portion of the fibrous glass into contact with a binder and molding the fibers into the desired shape (col. 3, lines 21-65; col. 4, lines 40-62). Hetherington does not teach the glass fibers are continuous or that the binder hardened outer shell is formed by placing the binder on internal wall of the preform mold prior to feeding the fibrous glass.

However, Kirk teaches that in forming products from glass wool fibers, continuous glass fibers provide advantages of improved strength, higher service temperature and lower levels of required binder than discrete length glass fibers and employ a heated mold to shape the product as desired (Figure 2; col. 1, line 23-col. 2, line 34; col. 7, line 56-col. 8, line 4). Additionally, Oswitch et al. teach a method of providing a hardened gel coating around the exterior of a fiber glass article by placing the binder, in the form of a pre-fabricated gel coat, on internal wall of the preform mold prior to feeding the fibrous glass into the mold (col. 1, lines 15-col. 2, lines 2; col. 3, line 58-col. 4, line 64).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed continuous glass fibers as suggested by Kirk in the method disclosed by Hetherington and to have formed the hardened outer shell by the method disclosed by Oswitch et al. for the purpose of realizing the advantages of continuous

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glass fibers disclosed by Kirk and to have effectively formed the hardened outer shell in an art recognized equivalent alternative method as suggested by Oswitch et al.

As to claims 15 and 16, Kirk teaches the fibers are texturized prior to entry into the mold (Abstract; Figure 1). Further, it is noted that the molded product is intrinsically removed from the mold when the process is complete.

Response to Arguments

Applicant's arguments filed April 16, 2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager
Examiner
Art Unit 1732

July 10, 2007


CHRISTINA JOHNSON
SUPERVISORY PATENT EXAMINER

7/12/07